GEOGRAPHIC NEWS BULLETINS

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(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated under the Federal law as a non-commercial institution for the increase of geographic knowledge and its popular diffusion.)

General Headquarters, Washington, D. C.

Contents for Week of April 11, 1932. Vol. XI. No. 9.

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2. Michigan's Upper Peninsula, Land of Copper, Iron, Timber and Limestone.
3. "Seeing Cherry Trees in Bloom," Now a Washington Tradition.
4. Sugar's Long Journey to the Dinner Table.
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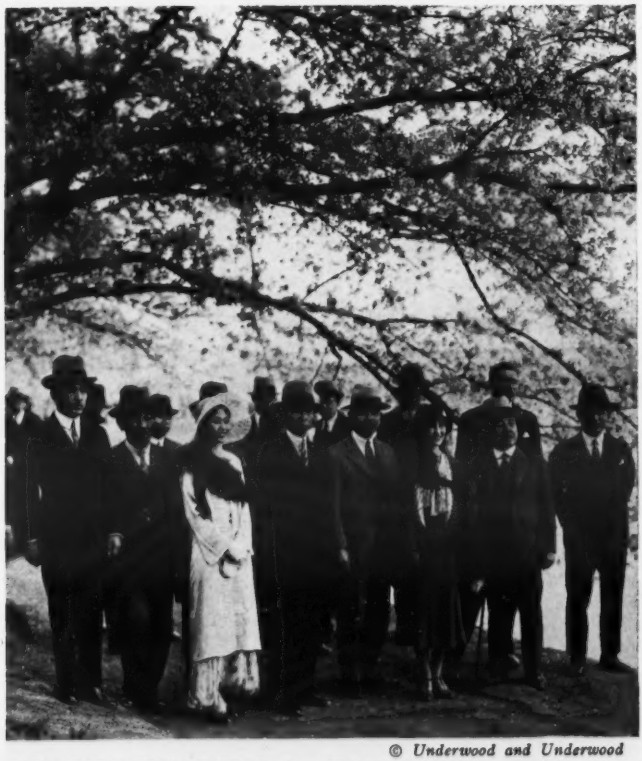

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JAPANESE ROYALTY BENEATH WASHINGTON'S CHERRY TREES

Second and third from the right, the Japanese Ambassador and Madame Debuchi; fifth and sixth, respectively, Prince and Princess Takamatsu, during their American visit in April, 1931 (See Bulletin No. 3).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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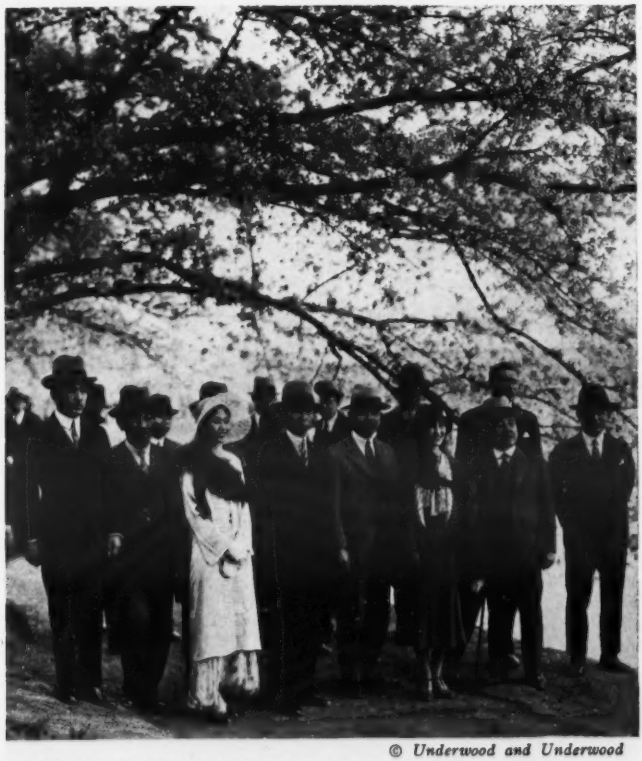

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How First Natural Color Pictures of Peiping's Forbidden City Were Obtained

W. ROBERT MOORE, of Washington, staff representative of the National Geographic Society, has just returned to Washington from a nine-month tour and photographic survey of the Far East, during which he gathered geographic data and took some 2,700 photographs, including the first natural color photographs ever made of the Imperial Forbidden City in Peiping (Peking).

Since Peiping no longer is the capital of China, many places closed to the public now are open, Mr. Moore said, though the Forbidden City still is closely guarded, and it was only by special arrangement that he was able to photograph the buildings and courtyards where the Mings and Manchus lived and ruled.

Met Trans-Asiatic Expedition

Mr. Moore gathered information and took photographs in Japan, Chosen (Korea), along the China coast, and in the Hawaiian Islands. Last January he also went to Paotow, caravan center in the sandy desert region of Inner Mongolia, where he met the Citroën-Haardt Trans-Asia Expedition, with which the National Geographic Society cooperated, on the last leg of its motor journey across the high mountains and vast desert areas of the "mother continent."

He aided Dr. Maynard Owen Williams, The Society's representative with the Expedition, whose leader, Georges-Marie Haardt, died suddenly at Hongkong, in developing the photographs taken along trails which never before had seen a wheeled vehicle or a camera. Mr. Moore also brought with him many of the expedition's photographs of areas, peoples, and natural history subjects which the explorers studied and photographed.

In recognition of the expedition's explorations and scientific achievements the leader, M. Haardt, only a few days before his death, was made Commander of the Legion of Honor by French diplomatic representatives, while Lieut. Commander Victor Point and Dr. Williams were named Chevaliers of the Legion.

Japan Not a Motoring Nation

While in Japan Mr. Moore spent several weeks motoring the length and breadth of the country where, in many places through the rural districts, motoring is yet in its infancy because of the limited development of the road system, and highways are in sharp contrast to the excellent railroad network that has been built up throughout the Island Empire. He found many changes had taken place there since his last visit to Japan only a few years ago, especially in the modernized city of Tokyo which has risen since the great earthquake there in 1923. To-day the entire business portion of the capital city has wide streets and fine modern seven- and eight-story office buildings.

Japan, during the autumn season last year, with all its gorgeous frost-tinted maples and its chrysanthemums, provided many subjects for the natural color lens, as also did the harvesting season.

From Japan Mr. Moore visited Chosen and spent some time in Keijo, Heijo, and other cities, and in the Diamond Mountains where there are many centuries-old Buddhist monasteries of note.

After passing through Manchuria he devoted much time to securing material and visiting all of the major ports along the China coast as far south as Hongkong, Canton and Macao, and later returned to Peiping where he produced the record in natural colors of the wonders of the old Imperial Capital.

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© *Herbert G. Ponting*

ONE OF THE SUPERB BRONZE LIONS IN THE LAMA TEMPLE, PEIPING

While this temple monastery is not within the so-called "Imperial Forbidden City" it was once an imperial palace, and many of its art treasures can be compared, on a small scale, to those within the dwelling place of the last of China's Emperors. Once the residence of an "Hutuktu," or Living Buddha, Lama Temple housed more than 1,500 priests and monks, mostly Mongolians. The Republic has allowed the temple to fall into disrepair, although the Imperial Forbidden City has been better cared for under the guardianship of a special committee of Chinese and foreigners (See Bulletin No. 1).

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Michigan's Upper Peninsula, Land of Copper, Iron, Timber and Limestone

MANISTIQUE, Michigan Upper Peninsula city, had a hundred Fourth of July celebrations rolled into one recently when the biggest commercial dynamite blast on record, some 441,000 pounds of explosive, was set off in a near-by limestone quarry to dislodge a year's supply. Although the town scarcely felt the earthquake that followed, the tremor registered itself on the seismographs at Georgetown University, Washington, D. C., and at Michigan State College, East Lansing, Michigan.

Michigan's Upper Peninsula, with an area twice that of the State of Massachusetts, was considered worthless when it was given to the Wolverine State in exchange for the so-called "Toledo strip," following the dispute of 1835-37 with Ohio. It has proved to be a bonanza of mineral and timber wealth.

Helped To Give Michigan Longest Coast

A 400-mile drive from St. Ignace, on the Straits of Mackinac, to Ironwood, on the Wisconsin border, leaves one impressed with the Upper Peninsula's size and resources. Indeed, lower Michigan was similarly impressed when, early in the nineteenth century, she began investigating the country "west of the Soo."

This legislative postscript to Michigan proved to be bigger than any one of seven Atlantic States. Contributing nearly a third of Michigan's total area, it enlarged her land surface to 57,480 square miles—placing her twenty-first in the nation and second east of the Mississippi. It increased her coastline to the longest among the States.

Drive from Ironwood to the Keweenaw country and you will be amazed by the mixture of wild scenery and economic wealth; for in the Calumet region, clustered on the fringes of a virgin forest 15 miles in breadth, lie some of the world's most valuable copper and iron mines. These mines constituted the "legislative postscript's" second surprise for newborn Michigan.

In 1842 James K. Paull found a huge bowlder of copper in the Ontonagon River. There followed the fame of the Calumet and Hecla lode in the Keweenaw, and a copper output which is reckoned at more than seven billion pounds to date.

"Cousin Jack" and "Cousin Jennie"

In 1845 Marji Gesick, a Chippewa chief, found at Ishpeming a lump of iron ore under a fallen pine. It was the forerunner of high-grade ore from the Marquette, Menominee, and Gogebic ranges.

The early fame of Michigan's mines spread overseas, and thousands of Cornishmen came to the Keweenaw. To-day an occasional "Cousin Jack" or "Cousin Jennie," as the Cornishman and his wife are known, can still be found to relate their childhood memories of Michigan's great mining boom.

Copper Harbor, which lies adjacent to some of the Keweenaw's gem-like forest lakes, hints by its name that you are still on the trail of the red metal. It is a route which will lead you across Lake Superior to Isle Royal; for it is there that Michigan's copper history finds its roots in legend and myth.

About 1665 Pierre Radisson crossed Lake Superior, located what Indians had described as a floating island of copper, and learned the legend associated with it. This told how, long ago, a strange people had come repeatedly to the copper island until the enraged Indian sea god had foiled their stealings by causing the island to wander eternally on the "Big-Sea-Water." Latter-day discovery has

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Not only his photographs of the Forbidden City but those of many other scenes in the former capital are considered of high geographic value because the landmarks and relics of the Imperialistic regime are falling into decay.

Note: The *National Geographic Magazine* has published several series of natural color photographs of China. See "Konka Risumgongba, Holy Mountain of the Outlaws," and "With the Devil Dancers of China and Tibet," July, 1931; "Carrying the Color Camera through Unmapped China," and "Glories of Minya Konka," October, 1930; "Demon Dancers and Butter Gods of Choni," November, 1928. For supplementary reading about places visited by Mr. Moore see: "Tokyo To-day," February, 1932; "How Half the World Works" (China), April, 1932; "Some Impressions of 150,000 Miles of Travel," May, 1930; "The World's Greatest Overland Explorer," November, 1928; "Road to Wang Ye Fu," February, 1926; "In the Diamond Mountains of Korea," October, 1924; and "The Geography of Japan," July, 1921.

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A KOREAN PROVERB SAYS: "HE WHO WOULD ENJOY HIS FOOD SHOULD NOT LOOK OVER THE KITCHEN WALL"

In the country districts of Chosen (Korea), one of the little-known regions visited by a staff photographer of the National Geographic Society during a color-camera survey of the Far East, bread dough is placed on a board and vigorously pounded with great mallets. At the bakeshops, where this process often takes place in the open air, dust and insects may be added to the regular ingredients.

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"Seeing Cherry Trees in Bloom" Now a Washington Tradition

THIS week and next thousands of visitors from all parts of the United States, and even from Canada and foreign countries, will come to Washington to see the annual blossoming of the Capital's famous Japanese cherry trees.

Just twenty years ago this spring Mrs. William Howard Taft, wife of the President, planted the first slim sapling of a gift shipment of 3,000 trees sent by the Mayor of Tokyo. Since that time the trees have grown, both in size and in the affection of the American people. To-day the annual pilgrimage to Washington to see the cherry trees in bloom has become a tradition.

How the Idea Originated

The idea of a grove of cherry trees along the Speedway and around the Tidal Basin in Potomac Park originated one afternoon during a visit of Miss E. R. Scidmore, a distinguished writer and interpreter of the Japanese, to the estate of David Fairchild, the plant explorer. At his Chevy Chase, Md., home "In the Woods" Dr. Fairchild had a few trees, imported from Japan. Miss Scidmore was delighted to find that the Japanese cherry grew as well in American soil as in its native Japan, and through arrangements made by her with Mrs. Taft, who was then in the White House, the Mayor of Tokyo and Dr. Jokichi Takamine, noted chemist, the Washington waterfront was planted with flowering cherry trees.

The first shipment was ill-fated, for the 2,000 large trees which composed it were found to be so badly infected with injurious insects that they had to be burned.

The incident was an embarrassing one. But, refusing to misinterpret the motive of the destruction of the trees, the Mayor of Tokyo and Dr. Takamine, advising with scientific plant men of their country, decided to repeat the shipment, sending plants so free from insects and blights as to win the admiration of American plant experts. This shipment arrived in the spring of 1912. With simple ceremonies, in which Mrs. Taft, the Japanese Minister, and a few others took part, the first tree was planted.

Trees Border Miles of Winding Roads

And now with the first warm winds of spring, the pink and white blossoms of thousands of flowering cherry trees stand out against the marble whiteness of the monuments to Washington and Lincoln in Potomac Park. For miles along the winding roads these trees are scattered, growing each year more beautiful and attracting more and more visitors.

Scottish heather and Irish shamrock are no more closely intertwined with the national life of the Scotch and Irish than is the cherry blossom with the life of the Japanese. No one walking beneath Washington's lovely gift trees can fail to be impressed when he knows that they appeal so strongly to the whole Japanese people that each spring at blossom time all business stops in Tokyo and even the legislature adjourns in order that every one may have leisure to enjoy them.

Note: See also: "Washington through the Years," *National Geographic Magazine*, November, 1931; "Some Impressions of 150,000 Miles of Travel," May, 1930; "Approaching Washington by Tidewater Potomac," March, 1930; and "Unique Gifts of Washington to the Nation," April, 1929.

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revealed on Isle Royal many small copper pits with numberless stone hammer-heads scattered around them.

To-day Isle Royal is almost as wild as when its mysterious miners labored there. Its 200 square miles of rugged ridges, deep gorges, and profile cliffs are clothed with a veritable "forest primeval" penetrated only by wild animal trails.

Nineteen fish species, principally lake trout, whitefish, and lake herring, form the State's annual catch, which some years amounts to more than 10,000 tons, valued at more than a million and a half dollars.

While more than 12,000 farms have been developed in the Upper Peninsula, lumbering constitutes a more important industry. It is estimated that four-fifths of Michigan's standing timber is located there, and that at the present cutting rate the logging camps have still thirty-five years' work ahead of them.

"Tall" Tales amid Tall Timbers

As befits this "land of the Ojibways" and these "shores of Gitche Gumee," the peninsula retains in its massed forests and beautiful lakes a remote and romantic charm. It is a fitting haunt for such Indian demigods as "Hiawatha" and such epic woodsmen as "Paul Bunyan."

Visit any Upper Peninsula logging camp and you will find that "Paul" and his "blue ox, Babe," still live in tales as "tall" as the surrounding timber. Some say that Paul was a gigantic French-Canadian lumberjack who took part in the Papineau Rebellion of 1837. Certainly by 1860 he had become a legendary hero whose exploits are known in Michigan, Washington, Oregon—wherever loggers gather around the camp stove.

Note: See also "Michigan, Mistress of the Lakes," *National Geographic Magazine*, March, 1928, and "Winter Sky Roads to Isle Royal," December, 1931. Students interested in the recording of earthquakes should also consult: "How the Earth Telegraphed Its Toyko Quake to Washington," October, 1923; and "Where the Mountains Walked," May, 1922.

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COPPER INGOTS WHICH WILL BECOME WIRING, ROOFS, PIPING, FIXTURES AND COINS

These blocks, awaiting shipment at Houghton, were refined from ore dug in the Keweenaw Peninsula, upper Michigan. The city of Houghton and Houghton County took the name of Douglas Houghton, State geologist, who first determined the vast mineral wealth of the district. Near-by are many iron ore pits and limestone quarries. Lake steamers provide easy and cheap transport to the great manufacturing districts of Chicago, Detroit, Cleveland, and, via trains, to Youngstown and Pittsburgh.

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Sugar's Long Journey to the Dinner Table

FOR the first time since May 14, 1914, nearly 18 years ago, the price of refined sugar touched four cents a pound on the New York wholesale markets in March. Uncertainty about the future plans of Cuba and Java sugar cane planters has pushed the price down and down. Cuba, the leading producer, has already announced a 1932 program which calls for more sugar, experts say, than is needed.

Cheapness of sugar hides the fact that it must undergo a long and expensive journey from standing cane to the family sugar bowl.

Oxcart Starts It on Its Way

Sugar cane must be mature to give the maximum quantity of sugar. When the stalk is cut and loaded into an oxcart, it has already survived a major operation by which it has lost its appendages—its blades and the upper part of the stalk which contains almost no sugar.

While automobiles glide through the sugar country to-day, the oxcart, long a part of the sugar plantation panorama, still collects the cut cane and delivers it to the nearest railroad for transport to the crushing machines. In Cuba a railway car transports about 20 tons of cane and each train consists of about 30 cars—600 tons of cane in a single trainload. Ten trainloads must be harvested to keep a crusher in operation for the 24 working hours in the height of the harvesting season.

After the cane is deposited on the oxcart, human hands seldom touch it until it emerges from a refinery, ready for the dinner table. A derrick lifts the cane from the oxcart, and deposits it on railway cars. At the crusher the cars are pulled, one at a time, onto a cradle-like device. A button is pushed, the car tilts and the cane falls into a deep pit where an endless conveyor belt delivers it to the crushers.

The crushers send forth a stream of foamy juice and a badly mangled mass of cane fiber. The fiber emerges from the last crusher almost as dry as tinder and is conveyed to the fire box to make steam for the destruction of other stalks.

Whitewash Used as Purifier

Meanwhile the cane juice is strained and mixed with whitewash. The mixture is heated to a degree just above the boiling point. The whitewash neutralizes the acid in the juice and invites some foreign substances to join it at the bottom of the tank. Other impurities take flight in the opposite direction, joining the foam on the surface so that the liquid in the middle is clean, pure juice which is drawn off through excelsior filters.

Large evaporators begin the process of transforming cane juice to sugar. Once through the evaporators, where a portion of the liquid has been removed, the syrupy mass is poured into vacuum pans where sugar crystals show themselves for the first time in the sugar-making process.

A man in charge of a vacuum pan is called a sugar master. As the thick syrup slowly boils and crystallizes, the sugar master adds fresh juice from time to time. The sugar from the fresh juice clings to the crystals already formed. The vacuum pans finally become filled with sugar and mother syrup. Then the sugar is removed to a machine that swirls it at the rate of from 1,000 to 1,400 revolutions a minute, forcing all the syrup from the crystals.

The syrup again is boiled and processed until it is relieved of nearly every particle of sugar. The remaining liquor is the "blackstrap" of commerce. Raw

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© Theodor Horydczak

LIKE A SCENE FROM FAIRYLAND: WASHINGTON'S JAPANESE CHERRY TREES IN BLOSSOM

A gift from the Municipal Council of Tokyo, these beautiful trees attract thousands of visitors to the National Capital during the time they are in bloom, generally the latter part of March and the first two weeks of April. Most of the land on which the trees are planted was reclaimed from the Potomac River by dredging and filling.

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Tornadoes, Their Pranks and Vagaries

WITH a throbbing roar "like racing automobiles" a tornado swept down on five Southern States in March, leaving a toll of more than 300 dead and 7,000 homeless in its wake. Several entire towns were wiped out. Houses were tossed around like match-boxes, and automobiles, freight cars, and wagons were piled up like toys. Alabama, particularly in the district between Tuscaloosa and Demopolis, was hardest hit, but the gale also took lives and caused heavy property damage in Georgia, South Carolina, Tennessee and Kentucky.

Weather authorities are not agreed whether the big twister was a series of tornadoes or one which jumped through the States.

Lower Mississippi Valley Hit Most Often

The favorite haunt of tornadoes in the United States includes the States of the lower Mississippi Valley and the eastern portion of the Great Plains States. Both to the east and west of this region their occurrences are fewer. Tornadoes are almost unknown in Canada and in Mexico.

Tornadoes have occurred in the East, however, and on several occasions have hit Washington, D. C. The most historic visit of a tornado to the National Capital was that on August 25, 1814, the day after Washington was captured by the British, and the Capitol and other buildings burned. The storm unroofed structures the British had neglected, but the rain which followed the tornado is supposed to have put out the remaining fires.

Tornadoes are usually local storms, bred by sultry and humid weather. They strike most often in the afternoon, and almost always take a path from southwest to northeast. This direction in the United States results from the fact that "lows" drift across the eastern part of the continent almost always from southwest to northeast and that the tornado (a secondary disturbance attached to the "low") takes the same direction.

The rapidly swirling column of air, which is the heart of the tornado, is usually marked by a funnel-shaped, black cloud of vapor. This whirling mass sucks air from all sides to its lower end and then upward. Even heavy objects fly toward the column, as dust particles and bits of paper fly into the throat of a vacuum cleaner. At sea these funnels are known as "water spouts."

Amazing Velocities Reached

The winds created do not blow for any great distance horizontally, but in their brief dash for the funnel they move at amazing speeds—sometimes with the velocity of a rifle bullet. It is these tremendous velocities that bring about the freakish antics of tornadoes: quills and straws penetrate boards and planks are driven through trees.

Most of the destructiveness of tornadoes is traceable to lowered air pressures when their centers pass over or by an area. The pressure being suddenly reduced outside a building, the air inside it expands and pushes the walls down or the roofs up—the buildings really explode, because of the release of, for the moment, "compressed" air within them.

Sometimes tornado clouds go skipping or bouncing along, working havoc where the lower end touches the ground, and leaving everything uninjured where the end lifts.

A distinction must be made between the velocity of the air rushing into the funnel, and the speed of the funnel itself moving over the earth. It has been

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sugar is yellow. It is whitened at the refineries. The principal American refineries are located in New Jersey, New York, Georgia, Louisiana and California.

Note: Cuba, chief producer of sugar, is described in "Cuba, Sugar Mill of the Antilles," *National Geographic Magazine*, July, 1920. See also "Under the South African Union," April, 1931; "Some Impressions of 150,000 Miles of Travel," May, 1930; "Into Primeval Papua by Seaplane," and "Java, Queen of the East Indies," September, 1929.

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SOUTH AFRICA ALSO EXPORTS QUANTITIES OF SUGAR

Here is a strange contrast: Modern sugar-making machinery and a native workman who has not yet achieved white man's clothing. Sugar-cane plantations dot the coastal belt of Natal (where this picture was taken), Union of South Africa. While South Africa does not rank among the leading sugar producers in the world it makes enough for its own needs and a surplus for export.

Geography Illustrations on Loose-Leaf Sheets

Until further notice the National Geographic Society's six Pictorial Geography sets—288 world-revealing photographs on loose-leaf sheets, and 288 vivid geographic narratives that explain the pictures—may be had for $3.50 by teachers, schools and libraries. The attached form may be used in ordering:

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pointed out that the former velocity, close to the funnel, may be that of a rifle bullet.

The funnel itself, however, seldom moves more rapidly than 30 or 40 miles an hour, the speed of an automobile moving rather conservatively on a country road.

Note: See also "Toilers of the Sky," *National Geographic Magazine*, August, 1925; and "How the Nations Name Their Winds," March 14, 1932, GEOGRAPHIC NEWS BULLETINS. For additional reading about the zone devastated by the recent tornado see: "Smoke over Alabama," December, 1931; and "Marching through Georgia Sixty Years After," September, 1926.

© *Clinton Johnson*

THE FUNNEL-SHAPED CLOUD THAT LABELS THE DREAD TORNADO

The photographer who took this picture (in North Dakota) reports: I noticed a very peculiar condition in the clouds. There was no wind blowing. The weather was hot. Clouds were moving from several directions to a common center, where the cloud-mass grew constantly darker and more threatening. There appeared to be no rain coming from the storm. Hanging downward from a low line of clouds, three whirling, funnel-shaped projections appeared, the two outside being soon drawn into the one in the center, which almost instantly started downward and soon was whirling along on the earth. The tornado was about 10 miles from the camera.

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